

each non-linear element material is a ferromagnetic material sensitive to a magnetic field and wherein the source is operable to produce a relatively small variable electric current which gives rise to a variable low value magnetic ^{field} ~~file~~ which is applied to the ferromagnetic material to adjust the initial state of the non-linear element and alter the behavior of the non-linear element during modulation of a high power radio frequency signal to change the timing of the radio frequency signal outputted from the generator unit, wherein each source includes a source of low power direct current which is applied to the input side of the non-linear dispersive electrical circuit with a high voltage input and which is returned to the source from the output side of the non-linear dispersive electrical circuit at the radio frequency signal output.--

--15. (NEW) A generator according to claim 14, wherein the computer is a computer control linked to each source of low power direct current and operable to vary the value of the control signals provided in each unit.--

REMARKS

Claims 1-3 and 5 stand rejected, with claims 4 and 6 objected to in the outstanding Official Action. Newly written claims 8-15 have been offered for consideration. Accordingly, claims 1-6 and 8-15 are the only claims remaining in this application.

The drawings stand objected to, with the boxes of Figure 3 not being labeled as originally filed. Applicants enclose herewith a proposed drawing correction adding labels to those boxes. Upon receipt of a Notice of Allowance and the approval of the Examiner, applicants will submit a corrected Figure 3 with such labels added. The drawing correction

requirement is requested to be held in abeyance pending such notification.

Claims 1 and 3 stand rejected under 35 USC 102(b) as being anticipated by Cicchetti et al (U.S. Patent 3,028,597). A rejection under 35 USC 102 requires that the cited prior art disclose each and every structure recited in the claims and that these structures be interrelated in the manner recited in the claims. Applicants' independent claim 1 specifies that there are a plurality of radio pulse generator units "each having a non-linear dispersive electrical circuit."

A review of the Cicchetti reference teaches that "the inherently broadband nature of traveling-wave tube amplifiers, is a consequence of the fact that they contain nondispersive radio frequency circuits," (emphasis added, Column 1, lines 62 to 64). Additionally, Cicchetti states that "because the amplifier is nondispersive," (emphasis added, Column 2, lines 3-4). Clearly, Cicchetti not only fails to teach RF generator units having a "non-linear dispersive electrical circuit," Cicchetti actually teaches the direct opposite, i.e. that one wishes to utilize "nondispersive radio frequency circuits" and/or "the amplifier is nondispersive." Thus, Cicchetti fails to teach the structure recited in applicants' claim 1 and inasmuch as claim 3 depends directly thereon, Cicchetti clearly fails to anticipate applicants' claims. Any further rejection of claims 1 and 3 over the Cicchetti reference is respectfully traversed.

Claims 2 and 5 stand rejected under 35 USC 103 as being unpatentable over Cicchetti in view of Braeckelmann (U.S. Patent 4,203,081) in view of Seddon (U.S. Patent 5,157,272). Inasmuch as claims 2 and 5 depend from claim 1, the above comments

distinguishing the claimed invention from the Cicchetti reference are herein incorporated by reference. The Examiner admits that Cicchetti "fails to teach the particular non-linear dispersive electrical circuit." This admission merely confirms that the rejection of claims 1 and 3, both of which include the recitation of the dispersive electrical circuit, was clearly inapplicable.

The Examiner suggests that Braeckelmann teaches a pulse generator with a dispersive time delay circuit. However, it is noted that Braeckelmann does not disclose the time delay circuit shown in applicants' Figure 1, and Braeckelmann's circuit has only plain inductors, i.e. there is no "non-linear" aspect to the Braeckelmann circuitry. Thus, it is not possible to combine Cicchetti and Braeckelmann by substituting Braeckelmann's dispersive circuit for Cicchetti's travelling wave tube, because Braeckelmann's dispersive circuit does not have any elements that can have their non-linearity modified to vary the time delay created. In other words, Cicchetti and Braeckelmann are mutually exclusive. The teaching of one cannot be implemented consistent with the teaching of the other.

Furthermore, even if one of ordinary skill in the art were instructed to somehow combine Cicchetti and Braeckelmann, they must now realize that the dispersive circuit must be adapted in some fashion to allow the time delay to be altered. The Examiner has pointed to no disclosure in either Cicchetti or Braeckelmann that suggests that one might wish to vary the properties of the Braeckelmann inductors. The Examiner perhaps contends that the Seddon reference provides non-linearity to inductors by using saturable magnetic materials. Again, the Examiner fails to provide any suggestion as to why someone attempting to

combine Cicchetti and Braeckelmann would resort to Seddon to provide the desired non-linear characteristics and then use these inductors in the place of the travelling wave tube of Cicchetti.

As noted above, there is no suggestion in either Cicchetti, Braeckelmann or Seddon which would lead or motivate one of ordinary skill in the art to combine teachings contained in the separate references and to ignore the mutually exclusive teachings in Cicchetti and Braeckelmann. The burden is on the Patent Office to establish the desirability and indeed the motivation for combining references and the Patent Office has failed to meet its burden in the present case. Accordingly, any further rejection of claims 2 and 5 under the provisions of 35 USC 103 over Cicchetti/Braeckelmann/Seddon is respectfully traversed.

The Examiner's indication that claims 4 and 6 contain allowable subject matter if rewritten in independent form is very much appreciated. Claim 4 has been rewritten including claims 1 and 3 as newly written independent claim 14 and newly written claim 15 has been added covering the subject matter of claim 6, but dependent on new claim 14. The allowability of these claims is appreciated and allowance of the newly written claims is respectfully requested.

Applicants' claims 1-6 recite structure in the "means-plus-function" format permitted by 35 USC 112 (sixth paragraph). However, because courts have construed this language relatively narrowly, applicants offer newly written claims 8-13 corresponding to claims 1-6, but written in non-"means-plus-function" format. Entry and consideration of these additional claims is respectfully requested.

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Serial No. 09/116,810

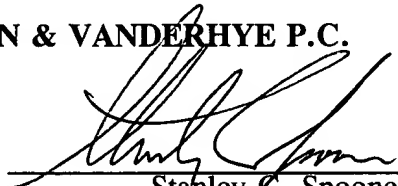
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Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-6 and 8-15 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact applicants' undersigned representative.

Respectfully submitted,

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Enclosures:
Proposed Drawing Correction

PROPOSED DRAWING CORRECTIONS

Fig.3.

